Multibridge Minimum System Requirements for Mac OS X

(in the following information, the word "we" refers to Black Magic Design, NOT Florida Music)

MAC OS X 10.4 TIGER, MAC PRO CONFIGURATION

Black Magic recommend the following software versions be used together: Mac OS X 10.4.7, Mac OS X 10.4.8, Final Cut Pro HD v5.1.2, QuickTime 7.1.3 and the latest Multibridge v5.9.x drivers.

Currently we recommend 2 GB of RAM for standard definition and at least 4 GB of RAM for high definition video. This specification may be updated at any time to recommend more RAM if we find that driver, application or Mac OS X updates require more RAM.

Memory modules must be installed in pairs in the Mac Pro. If you want to install 2 GB of RAM, you cannot just install a single 2 GB module. You must install either:
2 x 1 GB modules (= 2 GB), or
4 x 512 MB modules (= 2 GB).

Memory speed is particularly important for demanding video work such as RT effects. Sets of four memory modules provide increased memory speed compared with using only a single pair of memory modules. While you must install memory modules in pairs, it is even better to install in sets of four memory modules. The Mac Pro RAM configurations which will achieve ideal performance when when running Final Cut Pro are detailed by Apple in the article Final Cut Pro: For best performance on Mac Pro, install memory in risers symmetrically.

The Mac Pro has 4 disk bays with plug-in disk carriers. You can bolt a SATA II disk to the carrier and push it into place without needing to fiddle with any power or data cables. It's a very clever design.

We ran some tests on this in our lab and mounted 3 x 500 GB SATA II disks into the three empty bays, and striped them with RAID 0 for a 1.5 Terabyte internal disk array. We only used three disks because the fourth disk is used as the Mac OS X system disk. Testing was conducted using the following model of hard disk: Seagate 500Gb 7200rpm 16Mb 3.5" SATA II [ST3500641AS].

Blackmagic Disk Speed Test reported about 170 MB/sec which was easily fast enough for HD uncompressed 10 bit. However this three-disk internal solution is more suited to people needing simple capture and playback of HD, such as designers and effects artists. They just want simple clip capture and playback and the built-in three-disk array is a great solution for them. There

are also newer 750 GB disks, which are faster, and so performance could increase further.

For editors who have hundreds of cuts and/or effects in their projects, we would strongly recommend an external disk array with multiple disks. CalDigit HDPro disk arrays are highly recommended because they connect directly to the PCI Express bus of Mac Pro computers, just like Blackmagic Design Multibridge products. This means you can take advantage of the full speed of the PCI Express bus without the cost and latency associated with traditional HBA cards such as SCSI, Fibre Channel and FireWire cards.

The following storage systems have been verified by Blackmagic Design for use with uncompressed standard definition video. Almost any internal 7200 rpm SATA drive is adequate for capture and playback in a PowerMac G5 or Mac Pro. Stripe 2 or more drives together for use with real time effects and greater reliability.
-Apple Xserve RAID with 512 MB of RAM cache on the RAID controller(s).
-CalDigit HDPro
-G-Tech G-SPEED XL16 partnered with an ATTO Celerity FC-42ES card
-LaCie Biggest S2S with PCI-Express Card
-Promise VTrak M200f partnered with an Apple Dual Channel Fibre Channel card

The following storage systems have been verified with Blackmagic Design for use with uncompressed high definition video up to 1080i60 4:2:2.
-Apple Xserve RAID with 512 MB of RAM cache on the RAID controller(s).
-CalDigit HDPro, with direct PCI Express connection
-G-Tech G-SPEED XL16 partnered with an ATTO Celerity FC-42ES card
-LaCie Biggest S2S with PCI-Express Card
-Promise VTrak M200f partnered with an Apple Dual Channel Fibre Channel card

The following storage systems have been verified by Blackmagic Design for use with uncompressed high definition video up to 1080i60 4:4:4.
-CalDigit HDPro, with direct PCI Express connection
-G-Tech G-SPEED XL16 partnered with an ATTO Celerity FC-42ES card
-Maxx Digital Evo2 HD with Maxx Digital RAID Card
-Promise VTrak M200f partnered with an Apple Dual Channel Fibre Channel card

The following storage systems have been verified by Blackmagic Design for use with uncompressed 2K video up to 2048 x 1556 pixels at 24fps.
-CalDigit HDPro, with direct PCI Express connection
-G-Tech G-SPEED XL16 partnered with an ATTO Celerity FC-42ES card
-Maxx Digital Evo2 HD with Maxx Digital RAID Card

The Mac Pro has configurable PCI Express slots meaning that you can assign more PCI Express lanes to cards that need additional performance. After installing your Multibridge PCIe adapter card and starting up both the Multibridge

hardware and the Mac Pro, an Expansion Slot Utility will appear showing that you have a choice of four PCI Express Profiles:
-x16 Lane Graphics Slot + One x8 Lane and Two x1 Lane Slots
-x16 Lane Graphics Slot + Two x4 Lane and One x1 Lane Slots
-Three x8 Lane + One x1 Lane Slots
-Two x8 Lane + Two x4 Lane Slots

If you place the Multibridge PCIe adapter card in to a x1 lane slot, the Expansion Slot Utility might not appear and the adapter card might not be recognized by the Mac Pro. For this reason, we recommend the Multibridge PCIe adapter card be placed in slot 4 which is the top slot of the Mac Pro. The top slot has at least x4 lanes allocated to it in all PCI Express Profiles and therefore is always suitable for use with Multibridge.

Multibridge PCIe hardware requires a x4 lane slot for maximum performance regardless of whether you are working in standard definition, high definition or 2K film resolution.

As a general rule we would recommend that Multibridge users choose the second PCI Express Profile from the Expansion Slot Utility, ie x16 Lane Graphics Slot + Two x4 Lane and One x1 Lane Slots. This will provide two x4 lane slots which is perfect for use with a Multibridge PCIe adapter card and a SCSI, Fibre Channel or SATA disk array card (aka Host Bus Adapter or HBA).

Most HBA cards require a x4 lane slot. Some 4 GB Fibre Channel cards nominally prefer a x8 lane slot when using all four channels. However in reality, a x4 lane slot should be fine as the disks will not need any more speed than the Multibridge.

Standard definition, high definition and 2K film resolution are supported by any model of Mac Pro when partnered with Multibridge Extreme. Standard definition and high definition are supported by any model of Mac Pro when partnered with Multibridge Pro.

MAC OS X 10.4 TIGER, POWERMAC G5 CONFIGURATION
We recommend the following software versions be used together: Mac OS X 10.4.8, Final Cut Pro HD v5.1.2, QuickTime 7.1.3 and latest Multibridge v5.x drivers.

Currently we recommend at least 1 GB of RAM for standard definition and at least 2 GB of RAM for high definition video. This specification may be updated at any time to recommend more RAM if we find that driver, application or Mac OS X updates require more RAM.

Memory modules must be installed in pairs in the PowerMac G5. If you want to install 2 GB of RAM, you cannot just install a single 2 GB module. You must install either:
-2 x 1 GB modules (= 2 GB), or
-4 x 512 MB modules (= 2 GB).

The PowerMac G5 has 2 disk bays. One is usually used as the Mac OS X system disk and the other is spare. You can use a single disk in the spare disk bay for compressed capture and playback of video formats including HDV, DVCPRO HD, PhotoJPEG AND DV. However a single disk is usually inadequate for uncompressed video and certainly cannot be used for high definition uncompressed video. An external disk array should be used with the PowerMac G5 and uncompressed video.

Multibridge PCIe hardware requires a x4 lane slot for maximum performance regardless of whether you are working in standard definition, high definition or 2K film resolution. An x8 lane slot can also be used. Any dual-core or quad-core PowerMac G5 with PCI Express (PCIe) slots can be used with Multibridge PCIe hardware.

MULTIBRIDGE HD AND MULTIBRIDGE SD

The Multbridge Utility can be used to configure the Multibridge HD and Multibridge SD when used on any Mac containing a USB 2.0 port and a PowerMac G4, G5 or Intel processor. We expect that older Macs containing a PowerMac G3 processor and/or a USB 1.1 port should also work with the Multibridge Utility but this configuration is untested and unsupported.

The DeckLink Plus card included with the Multibridge SD card is a standard definition PCI card (33/66 MHz) and is supported by the DeckLink drivers which are installed by the Multibridge installer. It is only necessary to run the Multibridge installer for the Multibridge SD as this installer will also install the

DeckLink software for your DeckLink Plus card. Please refer to the DeckLink Minimum System Requirements for Mac OS X for detailed system requirements regarding all DeckLink cards.

PERIPHERAL HARDWARE

Please see our detailed support notes regarding disk arrays for uncompressed SD and HD video. An additional RS-422 serial option is not required for deck control on DeckLink systems, as the serial port is built in to the card. Some very old, or entry level, decks only provide RS-232 deck control. RS-232 deck control solutions can be used with DeckLink cards.

INCOMPATIBLE CONFIGURATIONS
The following configurations should not be used with DeckLink systems.

PowerMac G4's, and PowerMac G5's with PCI or PCI-X slots, cannot be used with Multibridge PCIe hardware for capture and playback. This is because Multibridge PCIe hardware requires a PCI Express (PCIe) slot. These older Macs can, however, be used to configure Multibridge hardware via the Multibridge Utility when it is run in standalone convertor mode via USB.

Processor upgrade cards cannot be used. It is necessary to use a PowerMac G5 or Mac Pro which meets the minimum system requirements in an unmodified state. Do not use processor upgrade cards with a PowerMac G5 or Mac Pro which already meets the minimum system requirements.